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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,961	03/15/2005	Gernot Schimetta	1454.1608	5351
21171 7590 03/30/2007 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER NGUYEN, TAI V	
			ART UNIT 3729	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/30/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/527,961

Applicant(s)

SCHIMETTA ET AL.

Examiner

Tai Van Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/15/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The following title is suggested: A METHOD FOR CONNECTING A CIRCUIT CARRIER TO A COMPONENT VIA CONTACTS.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 10, 11, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Higgins, III (US 5,639,989).

As applied to claims 10 and 16, Higgins et al discloses a method, comprising: connecting a circuit carrier (16, Fig. 1) to a component via contacts (14) which place the component at a distance from the circuit carrier; applying a foil (e.g. 19) to the component (13) and the circuit carrier; metallizing the foil as shield ring (26); and placing a solder bump (14) as a contact element on a first side of the circuit carrier (16) on which the component is arranged, the solder bump projecting beyond the component (see Fig. 1) and with respect a high frequency package (column 1, lines 30-39) as recited in claim 16.

As applied to claims 11 and 17, Higgins, III discloses wherein the metallizing of the foil includes electrically strengthening metallization of the foil (e.g. 26) and with respect a high frequency package (column 1, lines 30-39) as recited in claim 17.

5. Claims 12-15 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins III in view of Niki et al (US 4,967,261).

As applied to claims 12 and 18, Higgins, III disclose all of the limitations of the claimed invention except that the opening a window in the foil on a side of the component facing away from the circuit carrier and with respect a high frequency package (column 1, lines 30-39) as recited in claim 18. .

Niki et al teach the opening a window in the foil on a side of the component facing away from the circuit carrier (column 4, lines 23-65+).

It would have been obvious to one of ordinary skill in the art at this time the invention was made to have modified the method of Higgins by including open window in the foil, as taught by Niki, to positively provide a highly efficient and high density assembling of the chip on the substrate (column 2, lines 50-53).

As applied to claims 13 and 19, Higgins III wherein the component is a high frequency component, especially an very-high frequency component (column 1, lines 35-39) and with respect a high frequency package (column 1, lines 30-39) as recited in claim 19.

As applied to claims 14 and 20, Higgins, III further comprises mounting a passive component (13) on the circuit carrier (16) and with respect a high frequency package (column 1, lines 30-39) as recited in claim 20.

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6. Claims 15 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins in view Niki et al and further in view of Huang (US 6,507,121).

Regarding to claim 15 and 21, Higgins modified of Niki et al does not teach that the step of mounting of the passive component occurs on a second side opposite the first side of the circuit carrier, and respect a high frequency package (column 1, lines 30-39) as recited in claim 21.

However, Huang teach the passive component occurs on a second side opposite the first side of the circuit carrier (column 3, lines 7-23).

It would have been obvious to one of ordinary skill in the art at this time the invention was made to have modified the method of Higgins by including the step of mounting of the passive component occurs on a second side opposite the first side of the circuit carrier, as taught by Huang, to positively provide a solder ball array package structure in which standoff between the carrier and the substrate can be improved and the level of collapse can be controlled (column 2, lines 6-8).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tai Van Nguyen whose telephone number is 571-272-4567. The examiner can normally be reached on M-F (7:30 A.M - 4:30 P.M).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TN. March 23, 2007



A. DEXTERTUGBANG
PRIMARY EXAMINER